

SECTION 7. CONSTRUCTION STORM WATER PERFORMANCE STANDARDS

I.	Site Management Requirements	7-2
II.	Performance Standards	7-3
III.	Seasonal Requirements	7-4
1.	Dry Season Requirements (May 1 through September 30)	7-4
2.	Wet Season Requirements (October 1 through April 30)	7-5
IV.	Limitation of Grading	7-7
V.	Advanced Treatment	7-7
VI.	Example Construction Best Management Practices	7-9
1.	Erosion Control	7-9
2.	Sediment Control	7-9
3.	Materials Management	7-10
4.	General Construction Pollution Prevention BMPs	7-10

SECTION 7. CONSTRUCTION STORM WATER PERFORMANCE STANDARDS

Those projects that have been determined to require construction Best Management Practices (BMPs) in Section 2.I and Section 2.II of this Manual must identify the construction BMPs to be implemented in accordance with the performance standards in this section. The construction BMPs must be identified either in: 1) a Storm Water Pollution Prevention Plan (SWPPP), if the proposed land disturbance is one or more acres; OR, 2) a Construction Storm Water Management Plan (CSWMP), if the proposed land disturbance is less than one acre. These plans must be prepared in accordance with the guidelines in Section 2 of this Manual (Forms 5503, Form 5504A, or Form 5504B, as applicable).

It is the responsibility of the property owner and/or contractor to select, install and maintain appropriate BMPs. A list of construction BMPs is provided for reference in Section 7.IV. BMPs must be installed in accordance with an industry recommended standard or in accordance with the requirements of the State General Construction Permit. More information about BMPs is provided in references cited in Section 5 of this Manual.

BMP requirements differ between the wet season (October 1st – April 30th) and the dry season (May 1st – September 30th), the type of the project, and the topography of the site, as described below.

I. Site Management Requirements

Construction is a dynamic operation where changes are expected. Storm water BMPs for construction sites are usually temporary measures that require frequent maintenance to maintain their effectiveness and may require relocation, revision and reinstallation, particularly as project grading progresses. Therefore, owner/contractor self-inspections are required. They shall be performed by the owner's/contractor's qualified contact person specifically trained in storm water pollution prevention site management and storm water BMPs, including the installation and maintenance of sediment and erosion control measures. Additional qualified persons may assist with the inspection activities under the direction of the qualified contact person. A qualified contact person is required for all sites during both wet and dry weather conditions.

There are four primary purposes of the self-inspections conducted by owners and contractors:

- To ensure that the owners/contractors take full responsibility for managing storm water pollution caused by their activities.
- To ensure that storm water BMPs are properly documented and implemented and are functioning effectively.
- To identify maintenance (e.g., sediment removal) and repair needs.

- To ensure that the project proponents implement their storm water management plans.

A self-inspection list (noting date, time, conditions and inspection date) must be kept on-site and made available for City or other agency inspection, if requested. Self-inspections must be performed by a qualified contact person according to the following schedule of activities:

- Daily forecasting at all times.
- At 24-hour intervals during extended rainfall events.
- Daily evaluations as earth moving/grading is being conducted during the wet season.
- Weekly (every 7 days) in the dry season as earth moving/grading is progressing.

Storm water pollution prevention site management requirements include:

- a. A qualified person who is trained and competent in the use of BMPs shall be on site daily, although not necessarily full time, to evaluate the conditions of the site with respect to storm water pollution prevention. This qualified contact person shall represent the contractor/owner on storm water issues.
- b. The qualified person shall implement the conditions of the SWPPP/ CSWMP, contract documents, and/or local ordinances with respect to erosion and sediment control and other waste management regulations.
- c. The qualified person is responsible for monitoring the weather and implementing any emergency plans, as needed. The weather shall be monitored on a 5-day forecast plan and a full BMP protection plan shall be activated when there is a predicted 40% or greater chance of rain. Standby erosion control BMPs shall be deployed within 24 hours.
- d. The qualified person is responsible for overseeing any site grading and operations and evaluating the effectiveness of the BMPs. This person shall modify the BMPs as necessary to keep the dynamics of the site in compliance. This person or other qualified persons are responsible for checking the BMPs routinely for maintenance and documenting the BMPs being implemented.

II. Performance Standards

The City of Chula Vista will evaluate the adequacy of the owner's/contractor's site management for storm water pollution prevention, inclusive of BMP implementation on construction sites based on performance standards for storm water BMPs. Ineffective BMPs shall be replaced with more effective BMPs. Performance standards shall include:

- a. Minimize increases in pollution (including sediment) in runoff from the site to the Maximum Extent Practicable.
- b. Minimize slope erosion to the Maximum Extent Practicable.
- c. Minimize increases in water velocity moving offsite to the Maximum Extent Practicable.

A site will be considered inactive if construction activities have ceased for a period of 7 or more consecutive calendar days. At any time of year, an inactive site must be fully protected from erosion and discharges of sediment. It is also the owner's/contractor's responsibility at both active and inactive sites to implement a plan to address all potential non-storm water discharges.

Regardless of any inspections conducted by the City, property owners or contractors are required to prevent any construction-related materials, wastes, spills or residues from entering a storm water conveyance system.

III. Seasonal Requirements

1. Dry Season Requirements (May 1 through September 30)

Dry Season requirements include but are not limited to:

- a. Perimeter protection BMPs must be installed and maintained to comply with Section 7.II: Performance Standards.
- b. Sediment control BMPs must be installed and maintained to comply with Section 7.II: Performance Standards.
- c. BMPs to control sediment tracking must be installed and maintained at entrances/exits to comply with Section 7.II: Performance Standards.
- d. Material needed to install standby erosion control BMPs necessary to completely protect the exposed portions of the site from erosion, and to prevent sediment discharges, must be stored on site. Areas that have already been protected from erosion using physical stabilization or established vegetation stabilization BMPs as described below are not considered "exposed" for purposes of this requirement.
- e. The owner/contractor must have the ability to deploy standby erosion control BMPs as needed to completely protect the exposed portions of the site within 24 hours of a predicted storm event (a predicted storm event is defined as a forecasted 40% chance of rain). On request, the owner/contractor must provide proof of this capability that is acceptable to the City of Chula Vista.
- f. Deployment of physical or vegetation erosion control BMPs must commence as soon as grading and/or excavation is completed for any portion of the site.

- The project proponent may not continue to rely on the ability to deploy standby erosion control BMP materials to prevent erosion of graded areas that have been completed.
- g. Adequate number of washout areas shall be designated and maintained for materials, such as, concrete, stucco, paint, caulking, sealants, drywall plaster, etc.
 - h. Properly protected, designated storage areas are required for materials and wastes.
 - i. Remnant trash and debris shall be removed and/or properly stored/disposed of daily.
 - j. Storage, service, cleaning and maintenance areas for vehicles and equipment shall be identified and protected accordingly.
 - k. Materials for spill control/containment must be stockpiled on site.
 - l. Non-storm water discharges must be eliminated or controlled to the maximum extent practicable.

2. Wet Season Requirements (October 1 through April 30)

Wet season requirements include but are not limited to:

- a. Perimeter protection BMPs must be installed and maintained to comply with Section 7.II: Performance Standards.
- b. Sediment control BMPs must be installed and maintained to comply with Section 7.II: Performance Standards.
- c. BMPs to control sediment tracking must be installed and maintained at site entrances/exits to comply with performance standards Section 7.II: Performance Standards.
- d. Material needed to install standby erosion control BMPs necessary to completely protect the exposed portions of the site from erosion, and to prevent sediment discharges, must be stored on site. Areas that have already been protected from erosion using physical stabilization or established vegetation stabilization BMPs as described below are not considered "exposed" for purposes of this requirement.
- e. The owner/contractor must have the ability to deploy standby BMPs as needed to completely protect the exposed portions of the site within 24 hours of a predicted storm event (a predicted storm event is defined as a forecasted

- 40% chance of rain). On request, the owner/contractor must provide proof of this capability that is acceptable to the City of Chula Vista.
- f. Deployment of physical or vegetation erosion control BMPs must commence as soon as grading and/or excavation is completed for any portion of the site. The owner/contractor may not continue to rely on the ability to deploy standby BMP materials to prevent erosion of graded areas that have been completed.
 - g. Adequate number of washout areas shall be designated and maintained for materials such as concrete, stucco, paint, caulking, sealants, drywall plaster, etc.
 - h. Properly protected, designated storage areas are required for materials and wastes.
 - i. Remnant trash and debris shall be removed and/or properly stored/disposed of daily.
 - j. Storage, service, cleaning and maintenance areas for vehicles and equipment shall be identified and protected accordingly.
 - k. Materials for spill control/containment must be stockpiled on site.
 - l. Non-storm water discharges must be eliminated or controlled to the maximum extent practicable.
 - m. Erosion control BMPs must be upgraded, if necessary, to provide sufficient protection for storms likely to occur during the wet season.
 - n. Perimeter protection and sediment control BMPs must be upgraded, if necessary, to provide sufficient protection for storms likely to occur during the wet season.
 - o. Adequate physical or vegetation erosion control BMPs must be installed and established for all graded areas prior to the start of the wet season. These BMPs must be maintained throughout the wet season. If a selected BMP fails, it must be repaired and improved or be replaced with an acceptable alternate as soon as it is safe to do so. The failure of a BMP demonstrates that the BMP, as installed, was not adequate for the circumstances in which it was used, and shall be corrected or modified as necessary. Repairs or replacements must, therefore, put a more effective BMP in place.
 - p. All vegetation erosion control must be established prior to the wet season to be considered BMPs.

- q. A disturbed area that is not completed, but is not being actively graded, must be fully protected from erosion if left for 7 or more calendar days. The ability to deploy standby erosion control BMP materials is not sufficient for these areas. BMPs must actually be deployed.

IV. Limitation of Grading

The area that can be cleared or graded and left exposed at one time is limited to the amount of acreage that the owner/contractor can adequately protect prior to a predicted rainstorm. At no time shall disturbed soil area of the project site be more than 100 acres for an individual grading permit or a combination of grading permits under associated Tentative Map (i.e. TM XXX-1 through 3). The Director of Public Works may approve, on a case-by-case basis, expansions of the disturbed soil area limit. Soil stabilization and sediment control materials shall be maintained on site sufficient to protect the disturbed soil areas.

Under this requirement, grading shall be phased at larger sites. For example, it may be necessary to deploy erosion and sediment control BMPs in areas that are not completed but are not actively being worked before additional grading is done.

V. Advanced Treatment

Construction sites that pose an Exceptional Threat to Water Quality from sediment shall implement Advanced Treatment to eliminate or minimize the discharge of sediment from the construction site to storm drainage systems and/or receiving waters.

- a. For purposes of this Section, Exceptional Threat to Water Quality shall be defined as a site that meets all of the following criteria:
 - i. All or part of the site is within 200 feet of waters named on the CWA Section 303(d) list of Water Quality Limited Segments as impaired for sedimentation and/or turbidity;
 - ii. The disturbance area is greater than five acres, including all phases of the development;
 - iii. The disturbed slopes are steeper than 4:1 (horizontal: vertical) with at least 10 feet of relief, and drain toward the 303(d) listed receiving water for sedimentation and/or turbidity;
 - iv. The site contains a predominance of soils with USDA-NRCS Erosion factors k_f greater than or equal to 0.4. K_f is an NRCS soil erosion factor and the table for soils and their erosion factors in the San Diego region is readily accessible from the NRCS's web soil survey page or field office. The range of k_f in San Diego is 0.15 to 0.55. Michigan NRCS reports, "Soil erodibility factor K represents both susceptibility of soil to erosion and the rate of runoff, as measured under the standard unit plot condition. Soils high in clay have low K values, about 0.05 to 0.15, because they are resistant to detachment. Coarse textured soils, such as sandy soils, have low K values,

about 0.05 to 0.2, because of low runoff even though these soils are easily detached. Medium textured soils, such as the silt loam soils, have moderate K values, about 0.25 to 0.4, because they are moderately susceptible to detachment and they produce moderate runoff. Soils having a high silt content are most erodible of all soils. They are easily detached; tend to crust and produce high rates of runoff. Values of K for these soils tend to be greater than 0.4”.

- b. Advanced treatment may be required on sites that do not meet all four of the criteria for Exceptional Threat to Water Quality listed above at the discretion of the City based on a record of non-compliance.
- c. Alternatively, applicants may perform a MUSLE, RUSLE2, or similar analysis to prove to the City's satisfaction that Advanced Treatment is not required.
- d. Treatment effluent water quality shall meet or exceed the water quality objectives for sediment, turbidity, pH, and toxicity as listed in the Water Quality Control Plan for the San Diego Basin (9) for inland surface waters, lagoons, and estuaries for the appropriate hydrologic unit.
- e. Prior to obtaining a permit for proposed work, the applicant shall provide the following to the City:
 - i. A description of the work to be covered by permit for which the application is made;
 - ii. A description of the land on which the proposed work is to be done by legal description, street address or similar description that will readily identify and definitely locate proposed project site and area of proposed land disturbance;
 - iii. A plan of proposed work supported by necessary calculations, drawings, and supporting data prepared by a California Registered Design professional as required by the City;
 - iv. An operations and maintenance schedule for all proposed work acceptable to the City deemed necessary to achieve project water quality goals;
 - v. A monitoring plan for all required BMPs and water quality for all proposed work acceptable to the City deemed necessary to achieve project water quality goals;
 - vi. A written training plan for certification and documentation of necessary training and refreshers of staff to the satisfaction of the City.

VI. Example Construction Best Management Practices**1. Erosion Control**

Physical stabilization BMPs, vegetation stabilization BMPs, or both, will be required to prevent erosion and sediment runoff from exposed graded areas. BMPs for physical and vegetation stabilization include:

a. Physical Stabilization

- Geotextiles
- Mats
- Fiber rolls
- Sprayed on binders
- Mulch on flat areas
- Other material approved by the City for use in specific circumstances

If physical stabilization is selected, materials must be appropriate to the circumstances in which they are deployed, and sufficient material must be deployed.

b. Vegetation Stabilization

- Preservation of existing vegetation
- Established interim vegetation (via hydroseed, seeded mats, etc.)
- Established permanent landscaping

If vegetation stabilization is selected, the stabilizing vegetation must be installed, irrigated and established (uniform vegetative coverage with 70% coverage established) prior to October 1st. In the event stabilizing vegetation has not been established by October 1st, other forms of physical stabilization must be employed to prevent erosion until the stabilizing vegetation is established.

2. Sediment Control**a. Perimeter protection**

Protect the perimeter of the site or exposed area from sediment ingress/discharge in sheet flows using:

- Silt fencing
- Gravel bag barriers
- Fiber rolls

b. Resource protection

Protect environmentally sensitive areas and watercourses from sediment in sheet flows by using:

- Silt fencing
- Gravel bag barriers
- Fiber rolls

c. Sediment Capture

Capture sediments in channeled storm water by using:

- Storm drain inlet protection measures
- De-silting basins (Designed in accordance with an industry standard such as the latest editions of Caltrans Construction Site BMP Manual, CASQA Stormwater Best Management Practice Handbooks, etc. If the project is one acre or greater, the desilting basin(s) must be designed in accordance with the NPDES General Construction Permit, No. CAS000002, and any re-issuances thereof.

d. Velocity Reduction

Reduce the velocity of storm water by using:

- Outlet protection (energy dissipater)
- Equalization basins
- Check dams

e. Off-site Sediment Tracking

Prevent sediment from being tracked off-site by using:

- Stabilized construction entrance/exit
- Construction road stabilization
- Tracking control (i.e., corrugated steel panels, wheel washes)
- Dust control

3. Materials Management**a. Prevent Contamination by Waste**

Prevent the contamination of storm water by wastes through proper management of the following types of wastes:

- Solid
- Sanitary
- Concrete
- Hazardous
- Equipment – related wastes
- Stock piles (protection from wind and rain)

b. Prevent Contamination by Construction Materials

Prevent the contamination of storm water by construction materials by:

- Covering and/or providing secondary containment of storage areas
- Taking adequate precautions when handling materials.

4. General Construction Pollution Prevention BMPs

General pollution prevention BMPs that will be required from construction sites may include one or more of the following, depending on the nature of the activities performed at the site:

- a. Review construction activities, materials storage, and waste disposal methods for ways to reduce or eliminate generation of pollutants.
- b. Use less toxic alternative materials to the extent practicable.
- c. Reduce waste generation through recycling and better site management methods.
- d. Use dry and mechanical cleaning processes, instead of using chemicals.
- e. Make routine inspection of equipment for detection of leaking or faulty parts. For washing of equipment and tools, contain and store the effluent and dispose of it according to applicable laws and regulations.
- f. Minimize the use of hazardous materials.
- g. Store hazardous materials in locked enclosures.
- h. Keep an inventory of all hazardous materials received, used, and stored at the construction site. Order hazardous materials in quantities that will not require storage of large quantities at the site.
- i. Dispose of excess hazardous materials and containers according to all applicable laws and regulations.
- j. Provide adequate trash containers and receptacles at the site, and arrange for regular pickup of trash as necessary. Regularly clean trash enclosures and replace leaky or damaged trash containers with new ones.
- k. Educate and train staff on pollution prevention methods and require them to implement such methods at all times.
- l. Prevent contact of storm water with materials that may cause pollution of runoff from the facility.
- m. Minimize non-storm water flows from the site.
- n. Protect all storm drain inlets or catch basins from pollution.

- o. Inspect the site on a regular basis for any leaks, potential spills, faulty equipment that may cause pollution of runoff, and repair such deficiencies immediately.
- p. Sample and monitor storm water runoff for pollutants as required by the San Diego Regional Water Quality Control Board or the City of Chula Vista.
- q. Plan for erosion control and sediment control in advance. Arrange for all disturbed areas to be protected during the wet season.
- r. Divert flows from undisturbed areas around disturbed areas as much as possible.
- s. Locate service areas and equipment storage areas away from natural or man-made watercourses.